

Appl. No. 10/033,426
Amdt. dated July 1, 2004
Reply to Office Action of April 13, 2004

PATENT

REMARKS/ARGUMENTS

Claims 2-4 are pending in the present application. Applicants acknowledge with appreciation the time taken by the Examiner in the telephone interview on June 22, 2004. During the interview, the differences between the cited prior art references and the pending claims were discussed, as explained in more detail below.

In the Final Office action the claims continue to be rejected under 35 U.S.C. § 102(e) for allegedly being anticipated by Gordon *et al.* (US Patent No. 6,309,875) and under 35 U.S.C. § 102(b) for allegedly being anticipated by Jones *et al.* (US Patent No. 5,858,671).

It is well settled that a claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Bros. v. Union Oil Co. of California*, 2 USPQ2d 1051 (Fed. Cir. 1987) and MPEP §2131. As explained during the interview and in the comments below, the cited references fail to teach each and every element of the claimed invention.

Gordon

Gordon discloses a system of processing a nucleic acid sample contained in a liquid. As explained previously, Gordon relies on agitation of a liquid sample over a nucleic acid array under centrifugal force. The claimed invention comprises a cartridge (corresponding to the reaction cell of Gordon) which comprises a chamber in which an oligonucleotide array faces a wall, which as recited in claim 2 subparagraph (a.3) comprises a rigid segment which is adapted to be swung about a predetermined angle back and forth about a torsion bar. As explained in the previous response and during the interview, the reaction cell of Gordon lacks a rigid segment that moves with respect to the rest of the reaction cell.

During the interview, the Examiner acknowledged the differences between the prior art and the claimed invention but alleged that the cited differences were limitations regarding the use of the claimed device and not structural features. During the interview applicants pointed out that the features recited in claim 2 subparagraph (a.3) are, in fact,

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structural features because the claims are directed to a device comprising a cartridge comprising a rigid segment that swings about a predetermined angle.

The claims specifically recite that the rigid segment is connected to a torsion bar. A torsion bar (59) is exemplified in Figures 1 and 3 and discussed at page 9, lines 9-14. As explained and illustrated there, the torsion bar is a feature of the claimed device that allows the rigid segment to swing about the predetermined angle. The Examiner has failed to identify what in the Gordon reference corresponds to a torsion bar in the reaction cell disclosed there. Thus, the claims clearly recite at least a second structural feature that is distinct from the prior art.

Although applicants believe these structural features (a rigid member adapted to swing and a torsion bar) distinguish the claimed invention, to expedite prosecution, the claims have been amended to recite explicitly that the rigid segment swings with respect to the active surface about the torsion bar. Support for the claim amendment is replete throughout the specification and is shown, for example, in Figure 1 which shows the angle of movement of the rigid segment (47). In addition, the swinging movement of the rigid segment (47) with respect to the active surface (45) is described in detail at page 7, lines 4-12. This claim amendment clarifies that the rigid segment of the claimed invention does not swing as a result of centrifugation of the entire device but because the rigid segment moves separately from the rest of the cartridge.

In conclusion, claim 2 is directed to a system for processing a nucleic acid sample comprising cartridge that has a rigid segment adapted to be swung about a predetermined angle back and forth about *a torsion bar*, which is not disclosed in the prior art. In addition, the claim specifically requires that the rigid segment is adapted to move with respect to the active surface in the cartridge. As specifically recited in the claims, swinging of the rigid segment "in one sense moving one end thereof *towards* said active surface, and swinging of the rigid segment in an opposite sense moving said one end of that segment *away* from said active surface." (see Claim 2, subparagraph (a.3)). Thus, the claimed system comprises a rigid segment that is adapted to move *within* the cartridge. In contrast, Gordon teaches a chamber comprising walls that do *not* move with respect to each other, since mixing is achieved by movement of the *entire* cartridge on a centrifuge.

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As explained previously, Claim 3, which depends from claim 2, has the same limitation. Claim 4 is directed to cartridges of the invention and has the same limitation in subparagraph (c). Thus each of the pending claims comprises an element that is not disclosed by Gordon. In the absence of a showing how this element is disclosed or suggested by Gordon, the present rejection is improper and should be withdrawn.

Jones

The Jones patent, as discussed previously, describes methods for sequencing nucleic acids using hybridization and PCR amplification techniques. As in the case of the Gordon patent, the Jones patent uses centrifugal force to mix the sample solution and the arrays. In the description of Figure 9 at the bottom of Column 36, the patentees state that chips comprising the nucleic acid arrays are placed on a turntable and reagents are placed in the center. Centrifugal force drives the reagents radially outward to the chips. The chips are configured for flow-through operation to allow removal of the reagents from the chips.

Again, the rejection is based on an assertion that the rigid segment in the present invention is adapted to move by centrifugation. Nothing in the description cited by the Examiner refers to the use of a rigid segment that is adapted to be swung about a predetermined angle back and forth about a torsion bar, as explicitly claimed here. Moreover, as explained above, the claim specifically requires that the rigid segment is adapted to move with respect to the active surface in the cartridge. The Examiner has failed to identify these structural elements in the cited art. Since Jones neither discloses nor suggests these structural elements the rejection should be withdrawn.

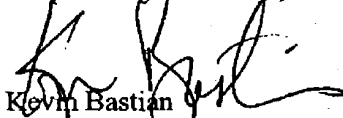
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CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested. If a telephone conference would expedite prosecution of this application, the Examiner is invited to telephone the undersigned at 415-576-0200.

Respectfully submitted,


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Attachments
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